

CLAIMS

We claim:

1. A storage rack for a livestock trailer having a trailer roof with a trailer roof vent and first and second opposite trailer sides, the storage rack comprising:

5 a first side support structure positioned to engage and attach to the first trailer side;

a second side support structure positioned to engage and attach to the second trailer side; and

10 a storage chamber spanning the first and second side support structures and positioned above the trailer roof vent so as not to block the trailer roof vent and so that any weight present in the storage chamber is transferred to sides of the livestock trailer, the storage chamber including:

a floor arranged to be located above and spaced from the trailer roof; and

a lid covering the storage chamber and movable between an open position

15 and a closed position.

2. The storage rack of claim 1, wherein the storage chamber attaches to the first and second side support structures to transfer aerodynamic forces so that the storage chamber remains attached to the trailer when traveling at highway speed.

3. The storage rack of claim 1, wherein the lid is a solid lid and the storage chamber further comprises a fluid tight seal so that no precipitation enters the storage chamber when the solid lid is in the closed position.

5 4. The storage rack of claim 1, wherein the storage chamber further comprises a piston having a first end attached to the lid and having a second end attached to the storage chamber so that the piston moves the lid between the open and closed positions.

10 5. The storage rack of claim 4, further comprising a lifting system attached to the storage chamber.

6. The storage rack of claim 5, wherein the lifting system further comprises:
an arm attached to the storage chamber;

15 a winch attached to the arm; and
a cable attached to the winch so that objects may be lifted to the top of the livestock trailer.

7. A fluid and dry goods transportation system, comprising:

20 a livestock trailer having a first and second trailer side support structures and a trailer roof, and having a vent in the trailer roof;

a frame attached to the first and second trailer side support structures of the livestock trailer, spaced away from the trailer roof, and positioned over the livestock trailer roof vent and above the trailer roof of the livestock trailer so that the livestock trailer roof vent is not blocked; and

5 a first storage compartment attached to the frame, spaced away from the trailer roof and positioned over the livestock trailer roof vent and above the trailer roof of the livestock trailer so that the livestock trailer roof vent is not blocked and so that any weight located in the first storage compartment and any aerodynamic force applied to the first storage compartment are transferred to the first and
10 second trailer side support structures of the livestock trailer.

8. The fluid and dry goods transportation system of claim 7, wherein the first storage compartment further comprises:

 a solid lid covering the storage compartment and moveable between an open
15 position and a closed position; and

 a fluid tight seal between the solid lid and the storage compartment, so that no fluid enters the first storage compartment when the solid lid is moved to the closed position.

20 9. A storage rack for a livestock trailer having a trailer roof with a raisable trailer roof vent and trailer sides, the storage rack comprising:

a plurality of side support structures, each side support structure positioned to engage and attach to the one of the livestock trailer sides;

a storage chamber spanning the first and second side support structures and positioned above the raisable trailer roof vent so as not to block opening of the

5 raisable trailer roof vent; and

wherein the storage chamber includes a floor attached to the side support structures to position the storage chamber above the raisable trailer roof vent and spaced the storage chamber from the trailer roof and a lid covering the storage chamber and movable between an open position and a closed position.

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10. The storage rack of claim 9, further comprising support braces positioned between the first side support structure and the storage chamber and between the second side support structure and the storage chamber so as not to block opening of the raisable trailer roof vent.

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11. The storage rack of claim 10, further comprising a ladder attached to one of the side support structures to provide access to the storage chamber.